

WHAT IS CLAIMED IS:

1        1.        An ink cartridge, comprising:  
2                a casing body including a first chamber allowing atmospheric air to  
3        enter therein, and a second chamber storing ink therein;  
4                a lid member, disposed within the second chamber movably in a  
5        vertical direction, the lid member partitioning the second chamber into a first  
6        space above the lid member and a second space below the lid member for  
7        storing ink, wherein a gap is formed between an outer periphery of the lid  
8        member and an inner periphery of the second chamber such that a meniscus  
9        of ink is formed therebetween;  
10              a partition member that partitions the first chamber from the second  
11        chamber, the partition member provided at an upper end of the second  
12        chamber, and having a through hole formed at a portion which is away from  
13        the inner periphery of the second chamber, the through hole allowing the  
14        atmospheric air to enter the second chamber; and  
15              an elastic member disposed in the second chamber, to urge the lid  
16        member upward, and maintain the second space of the at least one second  
17        chamber at a negative pressure.

1        2.        The ink cartridge as set forth in claim 1, further comprising a  
2        projection formed around the through hole so as to project from the partition  
3        member toward the first chamber.

1        3.        The ink cartridge as set forth in claim 1, further comprising an ink

2 absorber, disposed in the first chamber and surrounding an end of the through  
3 hole facing the first chamber.

1 4. The ink cartridge as set forth in claim 3, wherein the ink absorber is  
2 positioned away from the end of the through hole.

1 5. The ink cartridge as set forth in claim 1, further comprising a  
2 projection provided on at least one of a surface of the partition member facing  
3 the first space of the second chamber and an upper face of the lid member.

1 6. The ink cartridge as set forth in claim 5, wherein the projection is  
2 formed around the through hole so as to project from the partition member  
3 toward the second chamber.

1 7. The ink cartridge as set forth in claim 1, wherein a dimension of an  
2 inner periphery of the second chamber is gradually reduced toward a lower  
3 end of the second chamber.

1 8. The ink cartridge as set forth in claim 1, further comprising:  
2 an inlet, connected to the first chamber, and configured to supply  
3 waste ink to the first chamber;  
4 an outlet, connected to the second chamber at a lower end of the  
5 second chamber, through which the ink is supplied to an exterior of the ink  
6 cartridge; and  
7 a vent port, formed at a top portion of the ink cartridge to

8 allow the atmospheric air to enter the first chamber.

1 9. The ink cartridge of claim 1, wherein the first chamber is an L-shaped  
2 space formed above and lateral to the second chamber, for collection and  
3 storage of waste ink.

1 10. The ink cartridge as of claim 1, wherein the second chamber  
2 comprises first through fourth supply chambers filled with black ink, cyan ink,  
3 magenta ink, and yellow ink, respectively.

1 11. An ink jet printer, comprising:  
2 a print head; and  
3 an ink cartridge that supplies ink to the print head, comprising,  
4 a casing body including a first chamber allowing atmospheric  
5 air to enter therein, and a second chamber storing ink therein,  
6 a lid member, disposed within the second chamber movably  
7 in a vertical direction, the lid member partitioning the second chamber  
8 into a first space above the lid member and a second space below the  
9 lid member for storing ink, wherein a gap is formed between an outer  
10 periphery of the lid member and an inner periphery of the second  
11 chamber such that a meniscus of ink is formed therebetween,  
12 a partition member that partitions the first chamber from the  
13 second chamber, the partition member provided at an upper end of  
14 the second chamber, and having a through hole formed at a portion  
15 which is away from the inner periphery of the second chamber, the

16 through hole allowing the atmospheric air to enter the second  
17 chamber, and  
18 an elastic member disposed in the second chamber, to urge  
19 the lid member upward, and maintain the second space of the second  
20 chamber at a negative pressure,  
21 wherein the ink cartridge supplies the ink from the second chamber to the print  
22 head.

1 12. The ink jet printer as set forth in claim 11, further comprising:  
2 a platen for feeding a recording sheet in a sheet feeding direction,  
3 wherein a nozzle of the print head faces the platen;  
4 a carriage that reciprocatively moves the print head in a primary  
5 scanning direction;  
6 a cartridge holder that receives the ink cartridge and supplies ink to  
7 the print head via a nozzle; and  
8 a drive controller that controls operations of the ink jet printer.

1 13. The ink jet printer of claim 12, wherein the cartridge holder includes  
2 an ink supply needle for removing ink from the second chamber, and an ink  
3 recovery needle that supplies a waste ink to the first chamber.

1 14. The ink jet printer of claim 13, wherein the ink recovery needle  
2 receives the waste ink via a waste ink collecting passage from a nozzle cap by  
3 a pumping device positioned between the nozzle cap and the ink recovery  
4 needle.